The effects of education programmes on Atlantic bottlenose dolphin (Tursiops truncatus) behaviour

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Abstract

Atlantic bottlenose dolphins (Tursiops truncatus) are found in zoos and aquaria throughout the world. As the number of facilities with dolphin shows and interaction programmes increases, it becomes more important to understand the effects of such programmes on dolphin behaviour. The present study examined the short-term effects of dolphin shows and interaction programmes on the behaviour of Atlantic bottlenose dolphins at six facilities. Rates of affiliative behaviour, aggressive behaviour, repetitive behaviour and percentage of time spent socialising were found to be unrelated to dolphin shows or interaction programmes. Additionally, dolphins exhibited higher rates of behavioural diversity, diversity of swimming style, and play behaviour following shows and interaction programmes. These results suggest that dolphin shows and interaction programmes can be an important part of an enrichment programme for dolphins in zoological institutions. However, individual differences should be considered when animals participate in these types of programmes.

Keywords: animal management, animal welfare, dolphin interaction programmes, dolphin shows, dolphin swim-with programmes, environmental enrichment

Introduction

Atlantic bottlenose dolphins (Tursiops truncatus) are commonly exhibited in zoos and aquaria. These facilities often utilise the animals in dolphin shows and/or interaction programmes. The goal of dolphin shows and interaction programmes is to engage the guests while educating them about dolphins and conservation of the marine environment. Currently, there is an increasing trend in the number of dolphin shows and interaction programmes, with little scientific documentation on the effects of these programmes on the animals. While some have suggested that these types of programmes can be stressful to the animals (Frohoff 2004; Rose et al 2006), others hold the view that these programmes can be an enriching experience for the animals by increasing stimulation and control over the environment (Goldblatt 1993; McBain 1999). The latter would suggest that these programmes promote rather than compromise the welfare of the animals (Mason et al 2007).

In the wild, coastal populations of Atlantic bottlenose dolphins have been most commonly found to range in group size from 2 to 15 individuals (Odell 1976; Shane 1977; Gruber 1981; Leatherwood & Reeves 1983; Shane et al 1986; Wells et al 1987). These groups typically consist of adult females and their offspring, mixed or single-sex sub-adult groups or adult male alliances (Shane et al 1986). Although much remains to be learned about the complexity of these associations, it seems clear that associations between wild dolphins are important. Given their natural history, sudden or drastic changes in social relationships could be a potential indicator of negative well-being for dolphins within a zoo or aquarium environment.

Other potential indicators of negative well-being that have been suggested for dolphins include submissive posturing to other dolphins or humans, inappetive behaviour, stereotypic or abnormal behaviour (eg circle swimming), abrupt changes in behaviour and agitation (Sweeny 1990; Frohoff 2004). Abrupt changes in behaviour could include an increase in breathing rates, changes in group cohesion, an increased speed of swimming, or increases in communicative displays and vocalisations (Frohoff 2004). While it is likely that inappetive, stereotypic or abnormal behaviour would be indicative of negative well-being, many of the other behaviours occur within multiple contexts. An increase in breathing rate or swimming speed could occur during playful activity. Submissive posturing could simply occur as a function of social rank, and increases in vocalisations have also been suggested as a potential sign of a positive experience for other species (Boissy et al 2007).